

All Agency Project Request

2013 - 2015 Biennium

<u>Agency</u>	<u>Institution</u>	<u>Building No.</u>	<u>Building Name</u>
University of Wisconsin	Madison	285-0A-0015	MEMORIAL LIBRARY

<u>Project No.</u>	14E1L	<u>Project Title</u>	Memorial Library AHU SF-1 Renv
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Project Intent

This project provides investigation and research, pre-design, and design services to upgrade and renovate the air handling unit SF-1, located in the mechanical penthouse above room 562A, which serves the basement and first floor levels, to resolve physical condition and operational maintenance issues. The mechanical system and equipment will be evaluated to identify deficiencies, develop design solution alternatives, and recommend appropriate corrective measures.

Project Description

Asbestos abatement will be completed on the HVAC piping in the mechanical room, re-insulating all piping per current state specifications. Project work includes removing chilled water coils and installing new coil stacks, including a new galvanized steel support structure; installing new stainless steel drain pans under each coil stack; replacing chilled water coil shut-off valves, drain/vent valves, and control valves; and replacing the outside air dampers, return air dampers, relief dampers, and pneumatic actuators with electric units.

After coil demolition work, and prior to installation of new coils, an epoxy coating will be applied to the concrete floor within the air handling unit. The unit and panel-mounted pneumatic controls will be removed and new Johnson Controls (JCI) network automation engine (NAE) controller and compatible unit-mounted direct digital control (DDC) temperature control devices will be installed to enable network remote monitoring, scheduling, and control of the air handling unit. A new NAE controller will be furnished with additional capacity to facilitate future building control system expansion. Lighting inside of the air handling unit will be replaced. A protective aluminum floor grating system will be provided in the mechanical room over the open area of the main pipe chase to enhance worker safety.

Project Justification

The air handler and its components are original to the building that was constructed in 1950. The existing chilled water coils are arranged in four stacks of five coils, where the bottom coil supports the other four. The coil frames are rusted and the stacks are in danger of tipping over. Due to past coil leaks, large sections of fins have been removed where tube sections have been repaired or patched resulting in significantly reduced heat transfer efficiency across the coil stacks. The outside air, return air, and relief air dampers leak due to deterioration and inherent design shortcomings such as seal-less blade edges. Replacing the dampers and actuators will facilitate improved control of building pressure and ensure proper ventilation control in compliance with code requirements. The removal of the asbestos containing material on the piping systems in the mechanical room will eliminate the potential of exposure to a known health hazard during the work of this project and subsequent unit maintenance and operation activities. The intent is to have all asbestos containing piping insulation removed from the space and replaced with insulation meeting current state specifications, thereby enhancing the thermal efficiency of the system as well.

The air handling unit coil condensate pans are set directly on the floor of the air handling unit. Since the floor is concrete, there is potential for water leakage through cracks to the occupied space below should a pan or its drain piping fail. An epoxy coating system will be applied to the air handler's floor to form a secondary waterproof barrier. Installation of a grated floor system over the mechanical room pipe chase opening will provide a safety improvement for area workers that presently rely on an aged and questionable wooden floor structure cover plate.

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A/E Consultant Requirements

☒ A/E Selection Required?

Consultants should have specific expertise and experience in the design and project coordination of building air handling, ventilation systems, and exhaust systems as well as in-building chilled water piping system work as part of a design team. Work includes site surveys, acquiring field data, and verifying as-built conditions to assure accurate development of design and bidding documents and production of necessary design and bidding documents. Consultants should indicate specific projects from past experience (including size, cost, and completion date) in their letter of interest and when known, include proposed consulting partners and specialty consultants.

The consultant will verify project scope, schedule, and budget estimates, and recommend modifications as required to complete the specified project intent. The consultant will prepare a pre-design document to establish an appropriate project scope, budget, and schedule prior to the university seeking authority to construct from the Board of Regents and State Building Commission.

Commissioning

☒ Level 1

☐ Level 2

Project Budget

Construction Cost:	\$
Haz Mats:	\$
Construction Total:	\$
Contingency: 15%	\$
A/E Design Fees: 8%	\$
DFD Mgmt Fees: 4%	\$
Equipment/Other:	\$0

\$1,115,000

Funding Source(s)

GFSB - Facilities Maintenance & Renovation [Z060]	\$0
PRSB - []	\$0
Agency/Institution Cash [AGF0]	\$0
Gifts	\$0
Grants	\$0
Building Trust Funds [BTF]	\$28,000
Other Funding Source	\$0

\$28,000

Project Schedule

SBC Approval: 12/2014
A/E Selection: 07/2014
Bid Opening: 04/2015
Construction Start: 09/2015
Substantial Completion: 12/2015
Project Close Out: 03/2016

Project Contact

Contact Name: Kurt Beilman
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Telephone: (608) 890-1499 x

Project Scope Consideration Checklist

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1. Will the building or area impacted by the project be occupied during construction? If yes, explain how the occupants will be accommodated during construction. ☒ ☐

All project work will be coordinated through campus physical plant staff to minimize disruptions to daily operations and activities.

2. Is the project an extension of another authorized project? If so, provide the project #... ☐ ☒

3. Are hazardous materials involved? If yes, what materials are involved and how will they be handled? ☒ ☐

Required hazardous materials abatement has been included in the estimated project schedule and project budget. Comprehensive building survey inventory data is not available on Wisconsin's Asbestos & Lead Management

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System (WALMS) <<http://walms.doa.state.wi.us/>>.

4. Will the project impact the utility systems in the building and cause disruptions? If yes, to what extent? ☒ ☐

All project work will be coordinated through campus physical plant staff to minimize disruptions to daily operations and activities.

5. Will the project impact the heating plant, primary electrical system, or utility capacities supplying the building? If yes, to what extent? ☐ ☒

6. Are other projects or work occurring within this project's work area? If yes, provide the project # and/or description of the other work in the project scope. ☐ ☒

7. Have you identified the WEPA designation of the project...Type I, Type II, or Type III? ☒ ☐

Type III.

8. Is the facility listed on a historic register (federal or state), or is the facility listed by the Wisconsin Historical Society as a building of potential historic significance? If yes, describe here. ☐ ☒

9. Are there any other issues affecting the cost or status of this project? ☐ ☒

10. Will the construction work be limited to a particular season or window of opportunity? If yes, explain the limitations and provide proposed solution. ☒ ☐

Project work is seasonal. Preferred project work schedule should be limited to late fall, winter, and/or early spring months if possible.

11. Will the project improve, decrease, or increase the function and costs of facilities operational and maintenance budget and the work load? If yes, to what extent? ☒ ☐

Completion of this project will decrease operational maintenance costs.

12. Are there known code or health and safety concerns? If yes, identify and indicate if the correction or compliance measure was included in the budget estimate, or indicate plans for correcting the issue(s). ☐ ☒

13. Are there potential energy or water usages reduction grants, rebates, or incentives for which the project may qualify (i.e. Focus on Energy <<http://www.focusonenergy.com>> or the local utility provider)? If yes, describe here. ☐ ☒

14. If this is an energy project, indicate and describe the simple payback on state funding sources in years and the expected energy reduction here. ☐ ☒